

## Minh-Thuan Pham

Center for Environmental Toxin and Emerging-Contaminant Research, Kaohsiung, Taiwan

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### BASIC INFORMATION

**Name:** Minh-Thuan Pham

**Nationality:** Vietnam

**Birthday:** 16/06/1996

**Gender:** Male



### RESEARCH INTERESTS

**Ceramic filter** and **Ceramic catalytic filter** for air pollutants control (fabrication and Industrial application)

**Nanomaterials** (g-C<sub>3</sub>N<sub>4</sub> nano bulk and nanotubes, ZnSn(OH)<sub>6</sub> nanoparticles) and **Photocatalytic membranes**.

**Air pollutant control** (NO<sub>x</sub>, VOCs, CO<sub>2</sub>), **Renewable energy** (CO<sub>2</sub> conversions to valuable products, H<sub>2</sub> production), and **Carbon neutrality**.

### EDUCATION

#### Chung Yuan Christian University, Taoyuan, Taiwan

*Ph.D. of Civil Engineering*

Sep 2020 – Aug 2023

**GPA:** 3.98/4 (Top 1%)

**English Title:** Removal of Nitric Oxide from through the single photocatalysts, photocatalytic composites, and photocatalytic membranes: Discussion on Toxicity, Stability, and Mechanism.

**Chinese Title:** 應用光催化劑、光催化複合材料和光催化薄膜去除氮氧化物之研究：毒性、穩定性和機制的探討。

#### Chung Yuan Christian University, Taoyuan, Taiwan

*Master of Science in Environmental Engineering*

Sep 2018 – Sep 2020

**GPA:** 3.97/4 (Top 1%)

**English Title:** The application of TiO<sub>2</sub>@g-C<sub>3</sub>N<sub>4</sub> core-shell and Ag/g-C<sub>3</sub>N<sub>4</sub> composites for photodegradation on pollutant removal.

**Chinese Title:** 以綠色合成 TiO<sub>2</sub>@g-C<sub>3</sub>N<sub>4</sub> 及 Ag/g-C<sub>3</sub>N<sub>4</sub> 複合材料降解 NO<sub>x</sub> 與染料

#### University of Science, Vietnam National University Ho Chi Minh City, Vietnam

*Bachelor of Science in Materials Science*

Sep 2014 – Sep 2018

**GPA:** 2.75/4

### WORK EXPERIENCE

**Center for Environmental Toxin and Emerging-Contaminant Research, Cheng Shiu University, Kaohsiung, Taiwan**

Postdoctoral fellow and project manager

Sep 2023 – Now

**Research projects:**

1. Develop and improve the catalytic ceramic filter for air pollutant filtration.
2. Apply nanofiber for air filtration with catalysts support.
3. Research on ceramic fiber catalytic filters tube and bag, applied in exhaust gas treatment at waste incineration plants.

**FLK Clean Air Technology Limited (FLKCAT), Kaohsiung, Taiwan**

Research and Development Office

Research and Development Specialist (Project only)

Sep 2023 – Now

**Research projects:**

1. Research on ceramic fiber catalytic filters tube and bag, applied in exhaust gas treatment at waste incineration plants.

**Chung Yuan Christian University, Taoyuan, Taiwan**

Department of Environmental Engineering

Research Assistant (Ph.D.)

Sep 2019 – Aug 2023

Advisor: Prof. Sheng-Jie You, and Prof. Ya-Fen Wang

**Research projects:**

1. Morphology control of CeO<sub>2</sub> photocatalyst materials for CO<sub>2</sub> conversion applications
2. Fabrication of Nanocomposites and photocatalytic membranes for Air Purification.
3. Modeling the Photocatalytic NO<sub>x</sub> removal and CO<sub>2</sub> conversion reactor.
4. Understanding DeNO<sub>x</sub> and DeVOC Reactions of photocatalytic reaction.
5. Water analysis by Ion chromatography technique.

**Co-Supervisor for master student thesis:**

1. Modeling the Photocatalytic NO<sub>x</sub> removal reactor.
2. The photocatalytic removal of NO over the photocatalytic TiO<sub>2</sub>@g-C<sub>3</sub>N<sub>4</sub> membrane under visible light.
3. Rapid Fabrication of ZnO NRs for photocatalytic removal of NO under visible light.
4. The photocatalytic removal of NO over SnO<sub>2</sub>@g-C<sub>3</sub>N<sub>4</sub>, Ag/TiO<sub>2</sub>@g-C<sub>3</sub>N<sub>4</sub>, and Ag/MgO@g-C<sub>3</sub>N<sub>4</sub> under the visible and solar light.
5. Surface plasmon resonance enhanced photocatalysis of Ag nanoparticles-decorated Bi<sub>2</sub>S<sub>3</sub> nanorods for NO degradation.
6. Enhanced photocatalytic removal of nitric oxide over Ag-decorated ZnSn (OH)<sub>6</sub> microcubes.
7. The photocatalytic NO removal of Ag/TNTs.

## Ho Chi Minh City University of Technology (HUTECH), Vietnam

Photocatalysis Research Group (PRG),

Research Assistant (Ph.D.)

June 2016 – Sep 2019

Supervisor: Prof. Pham Van Viet, Prof. Cao Minh Thi

### Research projects:

1. Revisiting the Key Optical and Electrical Characteristics in Reporting the Photocatalysis of Semiconductors.
2. The absorption of Methylene Blue by Activated Carbon.

## SKILLS

### Analytical Software

Origin, Image J

### Materials Characterizations

XRD, XPS, EDS, TEM, DSC, TGA, FTIR, UV-Vis

### Materials Synthesis

Sol-gel, Hydrothermal, Redox, RF Plasma, Electro-spinning

## PUBLICATIONS

**JOURNAL ARTICLES (Total citations: 319, h-index: 10 – recorded by Google Scholar on 12/06/2024)**

1. Nguyen Hoai Anh, Duc-Viet Nguyen, Tuyen Anh Luu,..., **Minh-Thuan Pham**, et al. Unraveling Precise Locations of Indium Atoms in g-C<sub>3</sub>N<sub>4</sub> for Ameliorating Hydrogen Peroxide Piezo-Photogeneration. *Solar RRL*. – IF = 9.2, Q1
2. Huynh Phuoc Toan, Duc-Viet Nguyen, Pham Duc Minh Phan, Nguyen Hoai Anh, Pho Phuong Ly, **Minh-Thuan Pham**, et al. Simultaneously Utilizing Excited Holes and Electrons for Piezoelectric-Enhanced Photoproduction of H<sub>2</sub>O<sub>2</sub> from S-Scheme 2D S-Doped VO<sub>x</sub>/g-C<sub>3</sub>N<sub>4</sub> Nanostructures. *ACS Applied Materials & Interfaces*. – IF = 9.5, Q1
3. Hieu Trung Nguyen, Yung Yu Chan, **Minh-Thuan Pham**, Ya-Fen Wang, Sheng-Jie You, Photocatalysis and PMS activation caused by CuO/TiO<sub>2</sub> photocatalyst coated on PVDF membrane for mitigating membrane fouling. *Journal of the Taiwan Institute of Chemical Engineers*. – IF = 5.7, Q1
4. Hong-Quang Luu, **Minh-Thuan Pham**, Ya-Fen Wang, Sheng-Jie You. Enhancing NO degradation in visible light through plasma-treated photocatalytic substrates featuring TiO<sub>2</sub>@g-C<sub>3</sub>N<sub>4</sub> Z-scheme structure. *Environmental Engineering Research*. – IF = 3.5, Q2
5. Duyen PH Tran; **Minh-Thuan Pham**; Ya-Fen Wang; Sheng-Jie You. Tuning Visible Light-Driven Photocatalytic NO Removal: Insights from Glucose-derived CQDs/ZnO Nanorods Composite. *Journal of Environmental Chemical Engineering*. – IF = 7.7, Q1
6. Phuong, Ly Pho, Duc-Viet Nguyen, Luu Anh Tuyen, Nguyen Quang Hung, Pham Thi Hue, Nguyen Thi Ngoc Hue, **Minh-Thuan Pham** et al., Insights into Molten Salts Induced Structural Defects in Graphitic Carbon Nitrides for Piezo-Photocatalysis with Multiple H<sub>2</sub>O<sub>2</sub> Production Channels, *Advanced Sustainable Systems*. – IF = 7.1, Q1
7. Duyen PH Tran; **Minh-Thuan Pham**; Xuan-Thanh Bui; Sheng-Jie You, Deployment of the one-step solvothermal method to synthesize high-performance ZnO nanorods in photocatalytic NO degradation: A novel investigation, *Journal of Industrial and Engineering Chemistry*, 2023, 127, pp. 343-355. – IF = 6.1, Q1
8. Nhu Thi Thu Vo; Sheng-Jie You; **Minh-Thuan Pham**; Pham Van Viet. A green synthesis approach of p-n CuO/ZnO junctions for multifunctional visible-light-driven photocatalysis towards the degradation of contaminants, *Environmental Technology & Innovation* – IF = 7.1, Q1

9. Truc-Mai T Nguyen, Jein-Wen Chen, **Minh-Thuan Pham**, Ha Manh Bui, Chien-Chieh Hu, Sheng-Jie You, Ya-Fen Wang, A high-performance ZIF-8 membrane for gas separation applications: Synthesis and characterization, **Environmental Technology & Innovation**, 2023, pp. 103169. – IF = 7.1, Q1
10. **Minh-Thuan Pham**; Truc-Mai Thi Nguyen; Sheng-Jie You; Ya-Fen Wang, Photoredox-Catalyzed Decomposition of Nitric oxide over Au-Enhanced Surface Plasmon Resonance ZnSn(OH)<sub>6</sub> Microcubes, **Aerosol and Air Quality Research**, 2023, 23, pp. 220355. – IF = 4, Q2
11. Denny Dermawan; Aulia Nur Febriant; Emerald Eka Putri Setyawati; **Minh-Thuan Pham**; Jheng-Jie Jiang; Sheng-Jie You, The Potential of Transforming Rice Straw (*Oryza sativa*) and Golden Shower (*Cassia fistula*) Seed Waste into High-Efficiency Biochar by Atmospheric Pressure Microwave Plasma, **Journal Industrial Crops & Products**, 2022, 185, pp. 115122. – IF = 5.9, Q1
12. Duyen PH Tran<sup>#</sup>; **Minh-Thuan Pham**<sup>#</sup>; Xuan-Thanh Bui; Sheng-Jie You, CeO<sub>2</sub> as a photocatalytic material for CO<sub>2</sub> conversion: A review, **Solar energy**, 2022, 240, pp. 443-466. – IF = 6.7, Q1
13. **Minh-Thuan Pham**; Duyen PH Tran; Xuan-Thanh Bui; Sheng-Jie You; Rapid fabrication of MgO@g-C<sub>3</sub>N<sub>4</sub> heterojunctions for photocatalytic nitric oxide removal, **Beilstein journal of nanotechnology**, 2022, 13(1), pp. 1141-1154. – IF = 3.1, Q3
14. **Minh-Thuan Pham**; Nguyen Thi Van; Truc Mai Thi Nguyen; Hong-Huy Tran; Hieu Trung Nguyen; Jheng-Jie Jiang; Sheng-Jie You; Ya-Fen Wang, Enhanced photocatalytic removal of nitric oxide over Ag-decorated ZnSn(OH)<sub>6</sub> microcubes, **Sustainable Environment Research**, 2022, 32(1), pp. 1-12. – IF = 4.9, Q2
15. Hieu Trung Nguyen; **Minh-Thuan Pham**; Truc-Mai Thi Nguyen; Ha Manh Bui; Ya-Fen Wang; Sheng-Jie You, Modifications of conventional organic membranes with photocatalysts for antifouling and self-cleaning properties applied in wastewater filtration and separation processes: A review, **Separation Science and Technology**, 2022, 57(9), pp. 1471-1500. – IF = 2.8, Q3
16. **Minh-Thuan Pham**; Truc-Mai T Nguyen; Dai-Phat Bui; Ya-Fen Wang; Hong-Huy Tran; Sheng-Jie You, Enhancing quantum efficiency at Ag/g-C<sub>3</sub>N<sub>4</sub> interfaces for rapid removal of nitric oxide under visible light, **Sustainable Chemistry and Pharmacy**, 2022, 25, pp. 100596. – IF = 6, Q1
17. **Minh-Thuan Pham**; Hong Quang Luu; Truc-Mai T Nguyen; Hong-Huy Tran; Sheng-Jie You; Ya-Fen Wang, Rapid and Scalable Fabrication of TiO<sub>2</sub>@ g-C<sub>3</sub>N<sub>4</sub> heterojunction for Highly Efficient Photocatalytic NO Removal under Visible Light. **Aerosol and Air Quality Research**, 2021, 21, pp. 210276. – IF = 4, Q2
18. Pham Van Viet; Hoang-Phuong Nguyen; Hong-Huy Tran; Dai-Phat Bui; **Minh-Thuan Pham**; Sheng-Jie You; Cao Minh Thi, Constructing g-C<sub>3</sub>N<sub>4</sub>/SnO<sub>2</sub> S-scheme heterojunctions for efficient photocatalytic NO removal and low NO<sub>2</sub> generation, **Journal of Science: Advanced Materials and Devices**, 2021, 6(4), pp. 551-559. – IF = 8, Q1
19. Dai-Phat Bui; **Minh-Thuan Pham**; Hong-Huy Tran; Thanh-Dat Nguyen; Thi Minh Cao; Viet Van Pham, Revisiting the Key Optical and Electrical Characteristics in Reporting the Photocatalysis of Semiconductors, **ACS omega**. 2021, 6(41), pp. 27379-27386. – IF = 4.1, Q2
20. **Minh-Thuan Pham**; Adnan Hussain; Dai-Phat Bui; Truc-Mai Thi Nguyen; Sheng-Jie You; Ya-Fen Wang, Surface plasmon resonance enhanced photocatalysis of Ag nanoparticles-decorated Bi<sub>2</sub>S<sub>3</sub> nanorods for NO degradation, **Environmental Technology & Innovation**. 2021, 23, pp. 101755. – IF = 7.1, Q1
21. **Minh-Thuan Pham**; Hong-Huy Tran; Truc-Mai T. Nguyen; Dai-Phat Bui; Yu Huang; Junji Cao; Sheng-Jie You; Pham Van Viet; Vu Hoang Nam; Ya-Fen Wang; Understanding DeNO<sub>x</sub> and DeVOC Reactions by ZnSn(OH)<sub>6</sub> Photocatalysts with Exposed (200), (310), and (222) Facets, **Acta Materialia**, 2021, 215, pp. 117068. – IF = 9.4, Q1
22. **Minh-Thuan Pham**; Dai-Phat Bui; In-Fu Lin; Hoang Phuong Nguyen; Yu Huang; Jun-Ji Cao; Sheng-Jie You; Ya-Fen Wang; Enhanced near-visible-light photocatalytic removal of formaldehyde over Au-assisted ZnSn(OH)<sub>6</sub> microcubes, **Environmental Technology & Innovation**, 2020, 20; pp. 101112. – IF = 7.1, Q1

## Book Chapter

Duyen P.H Tran, **Minh-Thuan Pham**, Trung-Hieu Nguyen, Ya-Fen Wang, Sheng-Jie You, Chapter 3: Photocatalytic materials-based membrane for hydrogen production from water, **Membrane Technology for Sustainable Water and Energy Management-Elsevier**, 2022, *Published*

## ORAL PRESENTATION

1. **Minh-Thuan Pham**, Wang Ya-Fen, You Sheng-Jie, Photocatalytic removal of Nitric oxide over the photocatalytic  $\text{MgO@g-C}_3\text{N}_4/\text{PES}$  and  $\text{TiO}_2@\text{g-C}_3\text{N}_4/\text{PES}$  membranes, **The 3rd International Conference on Green Technology for Sustainable Environment 2022**, Taipei, Taiwan.
2. **Minh-Thuan Pham**, Nguyen Trung Hieu, Wang Ya-Fen, You Sheng-Jie, Photoredox-Catalyzed Decomposition of Nitric oxide over the photocatalytic  $\text{MgO@g-C}_3\text{N}_4/\text{PES}$  and  $\text{TiO}_2@\text{g-C}_3\text{N}_4/\text{PES}$  membranes: Discussion on Mechanism and Stability, **Euro Membrane 2022**, Sorrento, Italy.
3. Denny Dermawan, Vu Trung Hieu, **Minh-Thuan Pham**, Eko Julianto, Ya-Fen Wang, Sheng-Jie You, High efficiency, stable, easily separable, and recovery novel magnetic nanocomposite adsorbent for phosphate removal, **IWA World Water Congress & Exhibition 2022**, Copenhagen, Denmark.
4. **Minh-Thuan Pham**; Lkhagvajargal Ganzorig; Sheng-Jie You; Ya-Fen Wang, Photodegradation of Nitrogen oxide by  $\text{g-C}_3\text{N}_4$  and  $\text{g-C}_3\text{N}_4$  coated Fiber Glass, **The 28<sup>th</sup> International Conference on Aerosol Science and Technology**, 2021 Conference on Fine Particulate Matter ( $\text{PM}_{2.5}$ ), Air Quality and COVID-19 Issues, Pingtung, Taiwan
5. **Minh-Thuan Pham**; Yu-Yan Chen; Sheng-Jie You; Ya-Fen Wang, Enhanced photocatalytic removal of Nitric Oxide over Carbon quantum dot doped  $\text{ZnSn}(\text{OH})_6$  micro-cubic, **The 28<sup>th</sup> International Conference on Aerosol Science and Technology**, 2021 Conference on Fine Particulate Matter ( $\text{PM}_{2.5}$ ), Air Quality and COVID-19 Issues, Pingtung, Taiwan
6. **Minh-Thuan Pham**; Lkhagvajargal Ganzorig; Sheng-Jie You; Ya-Fen Wang, The photocatalytic removal of NO over  $\text{g-C}_3\text{N}_4/\text{glass fiber}$  under visible light, **2021 Taiwan Water Development Seminar**
7. **Minh-Thuan Pham**; Adnan Hussain; Sheng-Jie You; Ya-Fen Wang, Surface plasmon resonance-enhanced photocatalysis of Ag nanoparticles-decorated  $\text{Bi}_2\text{S}_3$  nanorods for NO degradation, **The 32<sup>nd</sup> (2020) Annual Meeting of the Environmental Engineering Society of the Republic of China and various specialized academic seminars**, Taoyuan, Taiwan
8. **Minh-Thuan Pham**; In-Fu Lin; Sheng-Jie You; Ya-Fen Wang; Enhanced near-visible-light photocatalytic removal of formaldehyde over Au-assisted  $\text{ZnSn}(\text{OH})_6$  microcubes, **2019 Taiwan-Japan International Symposium**, Taipei, Taiwan.

## POSTER PRESENTATION

1. **Minh-Thuan Pham**; Ya-Han Wang; Sheng-Jie You; Ya-Fen Wang, Surface Plasmon Resonance Enhanced Photocatalysis of Ag Nanoparticles Decorated  $\text{TiO}_2@\text{g-C}_3\text{N}_4$  heterojunction for NO Degradation, **The 12th Asian Aerosol Conference (AAC)**, Taipei, Taiwan.
2. **Minh-Thuan Pham**; Sheng-Jie You; Ya-Fen Wang, Revealing DeNO<sub>x</sub> and DeVOC processes in photocatalytic activity. **2022 Theory and Technique Taiwan Forum on Sustainable Environment – Academic Exchange and Job Fair (T&T TFOSE)**.
3. **Minh-Thuan Pham**; Yu-Yan Chen; Sheng-Jie You; Ya-Fen Wang, Enhanced photocatalytic removal of Nitric Oxide over Carbon quantum dot doped  $\text{ZnSn}(\text{OH})_6$  micro-cubic, **The 28<sup>th</sup> International Conference on Aerosol Science and Technology**, 2021 Conference on Fine Particulate Matter ( $\text{PM}_{2.5}$ ), Air Quality and COVID-19 Issues, Pingtung, Taiwan.
4. **Minh-Thuan Pham**; In-Fu Lin; Sheng-Jie You; Ya-Fen Wang; Enhanced near-visible-light photocatalytic removal of formaldehyde over Au-assisted  $\text{ZnSn}(\text{OH})_6$  microcubes, **The 2<sup>nd</sup> conference on Green Technologies for Sustainable Water 2019-HCMC**, Ho Chi Minh City, Vietnam.
5. **Minh-Thuan Pham**; Sheng-Jie You; Ya-Fen Wang, Synthesis of  $\text{Ag/g-C}_3\text{N}_4$  Porous Nanosheets for Highly Efficient Solar-Light Photocatalysis via Sunlight Photodegradation. **2019 Theory and Technique Taiwan Forum on Sustainable Environment – Academic Exchange and Job Fair (T&T TFOSE)**.

## AWARDS

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1. **An honorary member of The Phi Tau Phi** Scholastic Honor Society of the Republic of China from 3<sup>rd</sup> June 2023.
2. **The 1st place of oral presentation**, The 3rd International Conference on Green Technology for Sustainable Environment 2022.
3. **The Best Poster Award**, Taiwan Association for Aerosol Research for 2022 Theory and Technique Taiwan Forum on Sustainable Environment – Academic Exchange and Job Fair (T&T TFOSE).
4. **Raising start Award**, Water Affairs Organizations-Taiwan for 2021 Water Affairs Symposium.
5. **Highest Achievement- The best Solution**, The 2020 Green-Circular Competition by Taiwan Alliance for Sustainable Supply 2020.
6. **The Best Popularity Award**, The 2020 Green-Circular Competition by Taiwan Alliance for Sustainable Supply 2020.
7. **Winning excellent paper**, The 2019 Theory and Technique Taiwan Forum on Sustainable Environment – Academic Exchange and Job Fair (T&T TFOSE).

## COURSES

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**“The 14th school on Micro-Nanotechnology”**, MINATEC 2017 INT-VNUHCM (Vietnam) and CEA-LETIMINATEC (France) 2017

**“Chemical Hazards and Personal Protective Equipment”**, Campus Occupational Safety and Health Enhance knowledge and ability & Promote education training program Education Training of Occupational Safety and Health Course for foreign personnel. 2021

**“Membrane Technology for Water and Wastewater Treatment: Concepts, Design and Recent Applications”**, Sustainable Environmental Education (SEE) Center, Chung Yuan Christian University (CYCU) Taiwan 2022

**“Advanced Materials for Photocatalytic Applications: The Challenge and Prospects”**, Sustainable Environmental Education (SEE) Center, Chung Yuan Christian University (CYCU) Taiwan 2022

## REFERENCES

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### Prof. Sheng-Jie You

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Chung Yuan Christian University, Taiwan  
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### Prof. Ya-Fen Wang

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